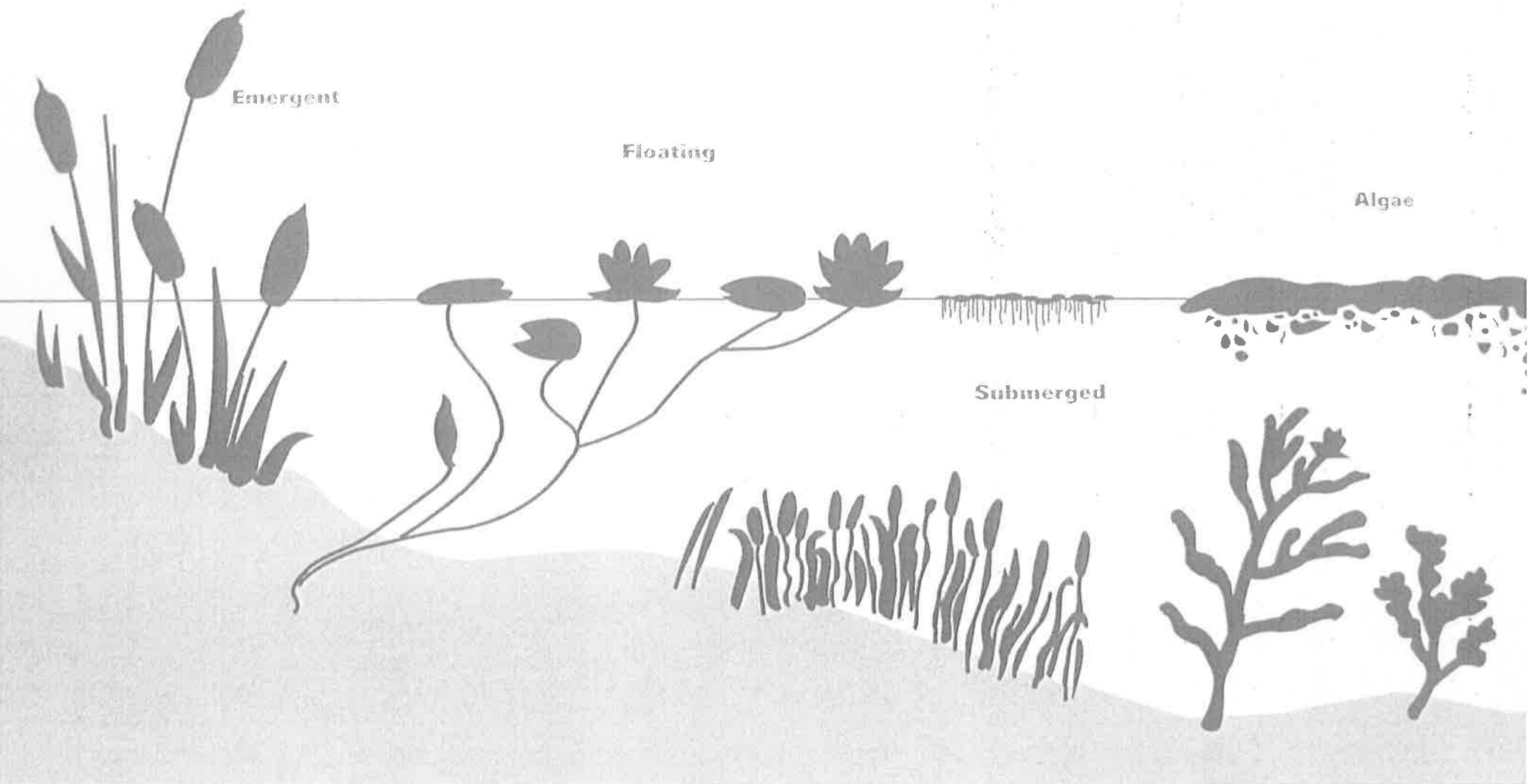
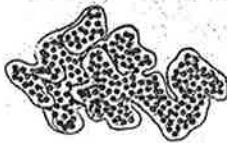
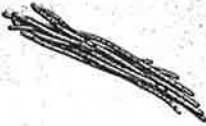








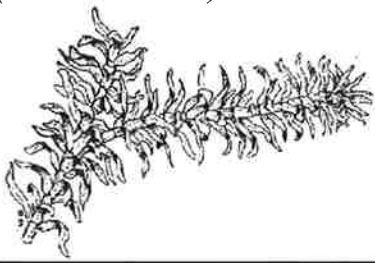







Types of Aquatic Plants and Algae Found in The Hideout Lakes



Types of Algae	Description/Characteristics	Issues/Concerns	Species Examples
<p data-bbox="69 118 321 151">Blue-Green Algae</p>   <p data-bbox="111 407 254 428">MICROCYSTIS</p> <p data-bbox="396 410 575 431">APHANIZOMENON</p>	<ul data-bbox="625 131 1087 362" style="list-style-type: none"> ■ Photosynthetic bacteria, microscopic in size. ■ Turns water a blue-green color or even reddish purple or brown. ■ Generally, grows in warm, nutrient rich lakes, ponds, and slow-moving streams. 	<ul data-bbox="1178 131 1696 472" style="list-style-type: none"> ■ Reduces light penetration in water; poor water clarity. ■ Produces a pungent odor and taste in water. ■ Causes oxygen depletion in water during die-off producing toxins. ■ Oxygen depletion can result in fish kills. ■ Ingestion of affected water can cause algal toxin poisoning to humans and animals. 	<ul data-bbox="1751 131 1965 321" style="list-style-type: none"> ■ Anabaena ■ Aphanizomenon ■ Microcystis ■ Oscillatoria
<p data-bbox="69 526 331 558">Filamentous Algae</p>   <p data-bbox="79 792 212 813">SPIROGYRA</p> <p data-bbox="296 794 470 815">HYDRODICTYON</p>	<ul data-bbox="625 539 1115 829" style="list-style-type: none"> ■ Most common algae resembling stringy hair or cotton candy like masses. ■ Begins growth at the benthic level in shallow water areas or may float upward attaching to emergent vegetation and other floating materials. ■ Growth eventually rises to the surface to form dense algal mats. 	<ul data-bbox="1178 539 1696 797" style="list-style-type: none"> ■ Thick mats can form and cover a lake/pond prohibiting light transmission throughout the water column. ■ Can produce a noxious odor. ■ Algae mats can interfere with fishing, boating, and swimming; and cause blockage of water flow control structures. 	<ul data-bbox="1751 539 2028 894" style="list-style-type: none"> ■ Cladophora ■ Cosmerium nauticulla ■ Hydrodictyon ■ Lyngbya ■ Oedogonium ■ Pithophora ■ Spirogyra
<p data-bbox="69 920 310 953">Planktonic Algae</p>   <p data-bbox="90 1154 260 1175">SCENEDESMUS</p> <p data-bbox="363 1156 485 1177">EUGLENA</p>	<ul data-bbox="625 933 1066 1133" style="list-style-type: none"> ■ Microscopic in size. ■ Turns water from a brown to green to bluish green in color. ■ Present in all lake/ponds as part of the beginning of the food chain. 	<ul data-bbox="1178 933 1650 1182" style="list-style-type: none"> ■ Reduces light penetration in water; poor water clarity. ■ Can produce a noxious odor. ■ Causes an unfavorable water color and surface film. ■ Film can cover an entire lake/pond surface. 	<ul data-bbox="1751 933 1934 1013" style="list-style-type: none"> ■ Euglena ■ Scenedesmus
<p data-bbox="69 1203 247 1235">Macro Algae</p>   <p data-bbox="111 1458 212 1479">CHARA</p> <p data-bbox="390 1459 512 1481">NITELLA</p>	<ul data-bbox="625 1216 1125 1474" style="list-style-type: none"> ■ Non-microscopic algae with a plantlike appearance with stems and branches ■ Can be rough to the touch due to its coating of calcium carbonate (Chara) or have a soft and smooth stem and branches (Nitella). ■ Chara is most prevalent in hard water while Nitella is commonly found in soft water. 	<ul data-bbox="1178 1216 1696 1474" style="list-style-type: none"> ■ Forms extensive submersed beds and grow to heights of 3 to 4 inches. ■ Can produce musty, garlic, or skunk-like odor (Chara) or no odor (Nitella). ■ Can be very beneficial as a nutrient sink, fishery habitat/food, anchoring of substrate, and a deterrent to nuisance weed growth. 	<ul data-bbox="1751 1216 1860 1295" style="list-style-type: none"> ■ Chara ■ Nitella

Submersed Aquatic Plants	Description/Characteristics	Issues/Concerns/Benefits
<p>Coontail (<i>Ceratophyllum demersum</i>)</p> 	<ul style="list-style-type: none"> ■ It is a rootless free floating plant that anchors itself in the mud early in the season to later float up near the surface. ■ Stems are slender, hollow, and branched and can grow up to 20 inches in length; leaves are whorled around the stem in bunches of 5 to 12. ■ It is very coarse with leaves ranging in color from olive to dark green. ■ Generally, it prefers to grow in hard water and can tolerate low light or deep water conditions in lakes and ponds. 	<ul style="list-style-type: none"> ■ It reduces light penetration in water (poor water clarity). ■ It can form large floating colonies which are often found growing amongst other weed species resulting in very dense floating beds which can spread to cover large areas. ■ It can interfere with boating, fishing, swimming and may cause blockage of water flow control structures. ■ It is home to snails, crustaceans and insect larvae providing food for fish. It also inhibits growth of blue-green algae by secreting sulfur-based toxins.
<p>Eelgrass (<i>Vallisneria spp.</i>)</p> 	<ul style="list-style-type: none"> ■ It is a plant with ribbon-like leaves that can grow 3 to 6 feet long. ■ It grows to the water's surface and produces flowers on long spiraling stalks. ■ It is present in many conditions in lake and ponds, but generally not in deep sediment areas. 	<ul style="list-style-type: none"> ■ Mainly a beneficial plant, it is used as a fish habitat as well as food for waterfowl.
<p>Elodea (<i>Elodea canadensis</i>)</p> 	<ul style="list-style-type: none"> ■ It is the most common PA plant. It can be either rooted or free-floating with slim green stems and grow up to 6 feet in length. ■ Smooth, green leaves are found along the stem in whorls of 3 and bend downward and are 1/4 to 2/3 inch long.; flowers are found at the tip of the stem at the water's surface and form 3 yellow or white petals. ■ Elodea can survive on the bottom of a lake or pond through the winter months. 	<ul style="list-style-type: none"> ■ Branches can that break off the plant continue to grow as they float. It has the potential to form large, dense populations over a period of time which eliminates other plant life. ■ It can interfere with boating, fishing, and swimming. The dense growths are can become unsightly with extensive growths blocking water flow control structures. ■ It can serve as a habitat for fish, wildlife food, and is an excellent oxygenator.
<p>Naiad (<i>Najas spp.</i>)</p> 	<ul style="list-style-type: none"> ■ Plants have a red-brown stem which grows several feet and are very leafy. Leaves vary from olive to dark green to purple-brown, are all submersed, opposite, or in whorls of 3, have a narrow, blunt or rounded tipped, and are from 1/4 to 1 inch long. ■ Flowers are concealed within the leaves. It produces very small white or lavender flowers approximately 1/2 to 3/4 inches wide. ■ It can grow in water up to 6 feet since it needs less light than most species and is usually the last submersed plant to bloom occurring towards the end of July. 	<ul style="list-style-type: none"> ■ It reproduces by plant fragments and seeds. ■ Aggressive species can be problematic interfering with boating, fishing, and swimming. The dense growths are can become unsightly. ■ It is used as a fish habitat as well as food for waterfowl.
	<ul style="list-style-type: none"> ■ 	<ul style="list-style-type: none"> ■


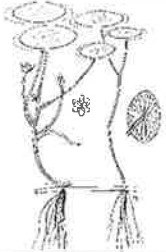
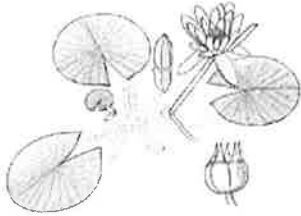
<p>Curly-leaf Pondweed (<i>Potamogeton crispus</i>)</p> 	<ul style="list-style-type: none"> ■ Plants have a whitish, tanish, zigzag stem. Its leaves are all submersed and dark green often with a reddish vein down the middle. Leaves are alternate and oblong with boxed leaf tips forming a perpendicular straight-edge. ■ The plants' distinguishing characteristic is the wavy edges of the leaves (like the edges of lasagna noodles). ■ It can grow in water up to 15 feet and lay dormant all winter to become the first submersed plant up in spring. 	<ul style="list-style-type: none"> ■ It is a very invasive weed with a very high reproduction rate and can spread to cover entire waterbodies. ■ It can interfere with boating, fishing, and swimming and form unsightly dense growths that reach surface. Extensive growth may cause blockage of water flow control structures. ■ Since it grows during the winter and spring, it can used for food and habitat during these slow growing times.
<p>Floating leaf Pondweed (<i>Potamogeton natans</i>)</p> 	<ul style="list-style-type: none"> ■ Plants have floating, smooth, wide leaves that are shiny green, pointed at the tip, and heart shaped at the base. Its submersed leaves are thin, long and narrow. ■ Flowers are produced and are a long, thin bundle of what looks like seeds stuck to the last one inch tip of a long stem. ■ It prefers shallow water of no more than 6 feet deep. 	<ul style="list-style-type: none"> ■ Because the size of the plant is so large, a new plant can take up a large water area which can interfere with fishing, boating, and swimming. ■ Where there is dense coverage, growth can prohibit light transmission to benthic layers. ■ Leaves create cover and shade for fish and it also serves as food for waterfowl.
<p>Large-leaf Pondweed (<i>Potamogeton amplifolius</i>)</p> 	<ul style="list-style-type: none"> ■ The floating leaves are egg-shaped while the submersed leaves are wavy and oblong tapering to the stem which is large and thick. ■ Flowers are produced and are a long, thin bundle of what looks like seeds stuck to the last one inch tip of a long stem. ■ It begins growth at the benthic level in shallow water areas or may float upward attaching to emergent vegetation and other floating materials and can grow to heights of nearly 8 feet. 	<ul style="list-style-type: none"> ■ These very large plants can reproduce to engulf entire waterbodies. Where there is dense coverage, growth can prohibit light transmission to benthic layers. ■ In massive growth areas, it can restrict oxygen available to fish within the waterbody and stunt fish growth ■ It also produces a large amount of biomass, can interfere with fishing, boating, and swimming, and extensive growth may cause blockage of water flow control structures.
<p>Thinleaf Pondweed (<i>Potamogeton spp.</i>)</p> 	<ul style="list-style-type: none"> ■ It has thin, branching stems and both floating and submersed leaves. The submersed leaves are light green, thin, flat, short, and squared at the tip. Floating leaves are small, egg-shaped, and bright green laying flat along the water's surface. ■ This plant species prefers shallow water. 	<ul style="list-style-type: none"> ■ Due to its high reproductive rate, this plant species can spread to cover entire shorelines up to a 6 ft. depth. ■ It can interfere with boating, fishing, and swimming. Dense growths that reach surface are unsightly.
	<ul style="list-style-type: none"> ■ ■ ■ 	<ul style="list-style-type: none"> ■ ■ ■

Eurasian Watermilfoil

(Myriophyllum spicatum)



- This plant has a thick stem and feather-like, bright-or dark-green leaves growing to lengths of 1 inch in whorls of 4 around the stem. Each stem may contain up to 12 of these whorl bunches up to one inch from one another.
- The stem (spike) sticks up out of the water where bunches of flowers develop upon the last few inches of the spike. Flowers are often reddish in color and look more like bundles of seeds.
- The plant can grow to heights of 15 feet.
- It is on the Federal Noxious Weed List.
- This aggressive plant has an extremely high reproduction rate. It is very common for it to reproduce in a short period of time to engulf entire waterbodies. When growth reaches the surface, it forms very thick, dense unsightly weed mats.
- Extensive growth prohibits light transmission to lower depths, reduces oxygen available for fish, stunts fish growth, crowds out and chokes out beneficial plant species.
- It interferes with boating, fishing, swimming and may cause blockage of water flow control structures.
- This species offers no benefit to waterbodies and produces a tremendous amount of biomass resulting in sediment build-up.

Floating Aquatic Plants	Description/Characteristics	Issues/Concerns/Benefits
<p>Duckweed (<i>Lemna major/minor</i>)</p> 	<ul style="list-style-type: none"> ■ This floating plant has a small, flat, clover-like appearance with a waxy, protective coating and a dangling root. ■ It begins its growth along shoreline areas and is usually found in stagnant water with high nutrient levels. ■ Plants often cluster together in groups of 3 or more and reproduce quickly by division. 	<ul style="list-style-type: none"> ■ It has a high reproduction rate and can cover 100% of water's surface with plant colonies prohibiting light transmission throughout the water column. It is rather resistant to treatment due to its waxy, protective coating. ■ It can deplete oxygen levels in a waterbody, manifest in an unsightly green layer (looks like a putting green) and interfere with fishing, boating, and swimming activities. ■ This plant is a source of food for waterfowl and provides cover for fish.
<p>Watershield (<i>Brasenia spp.</i>)</p> 	<ul style="list-style-type: none"> ■ This floating plant has 2 to 5 inch floating leaves which are green on top and purplish on bottom and oval to elliptical with no slit. ■ The stem is attached directly to the center of the leaf. Submersed leaves and stem are purplish covered with a jelly-like substance. ■ A dull purple flower with multiple stamens is produced in early summer, and it prefers to grow in 5 feet of water or less. 	<ul style="list-style-type: none"> ■ Where there is dense coverage, it prohibits light transmission throughout the water column. ■ It can interfere with boating, fishing, and swimming activities. ■ It provides a terrific fishery habitat; however, it reproduces rather rapidly and can spread to cover vast surface acres.
<p>White Waterlily (<i>Nymphaea odorata</i>)</p> 	<ul style="list-style-type: none"> ■ Floating leaves are round with a small slit and green on top and purplish on bottom. Leaves commonly grow to 6 to 12 inches. ■ Flowers are white and have multiple petals. ■ Plants prefer to grow in shallow areas. 	<ul style="list-style-type: none"> ■ In a hyper growth state, it can spread to cover vast surface acres. ■ Where there is dense coverage, these lilies can prohibit light transmission to benthic layers and interfere with boating, fishing, and swimming activities. ■ In <i>light to moderate</i> amounts, lilies provide terrific fishery habitat and nutrient sinks.